13. ESU-WIDE RECOVERY

13.1. Summer Chum Salmon Populations Recovery Goals

Sixteen historic stocks of summer chum salmon have been identified that comprise the Hood Canal Summer Chum Salmon Evolutionarily Significant Unit (ESU). Of these sixteen stocks, eight currently exist (called extant stocks). Those eight are spatially distributed throughout the geographic area of Hood Canal and the eastern Strait of Juan de Fuca. Consistent with the co-managers (Washington Department of Fish and Wildlife and the Point No Point Treaty Tribes) approach (PNPTT and WDFW 2003), this Salmon Recovery Plan (SRP) is designed to identify recovery actions that will provide the basis for recovery of all eight extant stocks. The SRP encourages the co-managers to reintroduce stocks where appropriate, and according to the guidelines established by the co-managers (WDFW and PNPTT 2000), and approved by National Marine Fisheries Service (NMFS 2002).

Summer chum salmon in Hood Canal and the eastern Strait of Juan de Fuca are most likely "a single metapopulation held together historically by a stepping stone pattern of demographic exchange" (Currens 2004 draft in progress). The "stepping stone" population structure is influenced by geography, life history of the fish, and habitat stability. Summer chum salmon, which return to spawn in the lower reaches of natal streams rather than in their headwaters, accentuates the linear, geographic pattern of genetic exchange that seems to be exhibited amongst summer chum salmon populations (Currens 2004 draft in progress).

Habitat stability influences how strong and quickly the "stepping stone" patterns of genetic differentiation may form. The importance of this pattern of "isolation-by-distance" in summer chum salmon has important implications for prioritizing recovery actions and reintroduction strategies (i.e., supplementation). This genetic pattern further supports the recovery approach being taken by this SRP. It attempts to preserve all remaining populations and their spatial diversity. It also attempts to provide opportunities for future recovery actions. The SRP endeavors to preserve the remaining extant stocks of summer chum salmon throughout the Hood Canal and Eastern Strait of Juan de Fuca. Preservation of this natural capital will allow a stronger basis to build on, and provide for future recovery opportunities. The SRP is designed, and will be implemented, to recover all eight remaining summer chum salmon stocks. When implemented, the SRP will help ensure that habitat critical for natural summer chum salmon population survival and productivity is retained or restored.

The recovery goals, as determined by the co-managers (PNPTT and WDFW 2003), apply to abundance, escapement, productivity and diversity of natural origin summer chum. These ESU-wide recovery goals account for the composite of summer chum stocks in addressing conditions for recovery. The goals set standards by which progress toward, and attainment of, recovery can be

measured. The Hood Canal summer chum interim recovery goals presented by PNPTT and WDFW (2003) address the parameters of annual abundance, spawning escapement, productivity, and diversity. NMFS has identified four parameters for use in evaluating the status of natural salmonid populations. These are the basis for its general guidelines identifying viable salmonid populations (McElhany et al. 2000). The NMFS parameters are abundance, productivity, diversity and population spatial structure. They are essentially the same parameters being used by the co-managers for the summer chum salmon ESU . As of June 2005, NMFS and the Puget Sound Technical Recovery Team had not established recovery goals or completed a viability analysis of Hood Canal/Eastern Strait of Juan de Fuca summer chum salmon.[50]

The co-managers' interim recovery goals (from PNPTT and WDFW 2003) include the following criteria. They state, "No less than the extant 6 Hood Canal natural stocks and 2 Strait natural stocks must meet all the individual stock recovery criteria. The corollary to this criterion is that, on average, the ESU-wide abundance must meet or exceed the sum of all these individual stock thresholds and the ESU-wide spawning escapement must meet or exceed the sum of all these individual stock escapement thresholds; also, on average, the ESU-wide productivity must meet or exceed 1.6 recruits per spawner."

"Ideally, recovery goals should be developed based on knowledge and assessment of the habitat and of how the habitat affects potential production, productivity and diversity of the stocks. Currently no such assessment exists that is adequate to tie the habitat directly to recovery goals. Studies should be undertaken in the future to develop quantitative relationships between habitat conditions and summer chum salmon performance within the watersheds and estuaries that then could provide knowledge for improving the recovery goals.

"For each stock, all of the following criteria must be met:

- The mean natural origin abundance and mean natural origin spawning escapement of each stock shall meet or exceed the above-described abundance and spawning escapement thresholds, over a period of the most recent 12 years.
- The natural origin abundance and natural origin spawning escapement of each stock shall be lower than the stock's respective critical thresholds (or, where applicable, minimum escapement flag) in no more than 2 of the most recent 8 years and, additionally, in no more than 1 of the most recent 4 years.
- Natural recruits per spawner shall average at least 1.6 over the 8 most recent brood years for which estimates exist and no more than 2 of the 8 years shall fall below 1.2 recruits per spawner."

[50] See SRP section 2.2.1 for more discussion about the TRT viability analysis.

The Puget Sound Technical Recovery Team (TRT), organized under the auspices of NMFS to address recovery planning, of listed salmon species for the Puget Sound area, has adopted the aforementioned NMFS parameters as a basis for development of recovery goals for the Puget Sound Chinook salmon ESU. The TRT has coordinated with WDFW and the western Washington Treaty Tribes in developing Chinook recovery goals. As the TRT considers recovery goals for the Hood Canal Summer Chum ESU, the SRP anticipates a similar coordinated effort that will take into account the interim recovery goals presented by the co-managers.

According to PNPTT and WDFW (2003), "Diversity is reflected in the number of life history pathways of a population, in its biological characteristics and genetic traits, in the population's spatial distribution, and in the number and distribution of all populations across the landscape. Diversity within and between stocks incorporates differences in geographic distribution, morphology, behavior, physiology and other characteristics that are controlled by genetics and habitat. Diversity can be difficult to define specifically and quantitatively by stock. However, conceptually, there is an understanding of risks associated with reduced diversity and of actions that can be taken to decrease risk of its loss."

Summer chum salmon in the ESU would be expected to be more diverse, with more and larger populations, and a greater spatial distribution. PNPTT and WDFW (2003) further state that, "Diversity reduces the risk of catastrophic impact, short-term environmental effects, and long-term effects of climatic cycles or regime shifts on individual populations and the species as a whole. It also enhances a population's ability to take advantage of a wider range of habitats." The protection and restoration of good quality habitat, across a wide range of environments, coupled with effective management of artificial production and harvest regimes, can foster diversity. Given that effective artificial production and harvest management regimes are in place, the SRP serves an integrating function by providing for the protection and restoration of good quality habitat. It seeks to ensure diversity, as envisioned by the co-managers as part of their interim recovery goals, for summer chum salmon (PNPTT and WDFW 2003).

The Summer Chum Salmon Conservation Initiative (SCSCI) includes provisions intended to protect and restore diversity of the summer chum salmon (PNPTT and WDFW 2003). These provisions include programs to reintroduce summer chum salmon into watersheds, where the stocks have become extinct, and to supplement critically low populations (see SRP section 5). Criteria and procedures for selecting and operating reintroduction and supplementation projects have been identified and are being implemented (Section 3.2 of SCSCI). These criteria, and procedures, are intended to minimize the risks of reducing diversity within and between stocks. A qualitative assessment of summer chum salmon habitat has also been completed in the watersheds and nearshore areas of Hood Canal and the Eastern Strait of Juan de Fuca. Recommendations have been made for restoring watershed functions and increasing habitat complexity;

to improve habitat conditions supportive of population diversity (section 3.4 of SCSCI and SRP sections 7-12). Finally, the Co-managers have developed a Base Conservation Regime to control harvest, and help rebuild the summer chum salmon populations and their diversity (Section 3.5 of SCSCI and SRP section 4).

In addition to the above ESU-wide interim recovery goal provision, that all currently extant stocks meet individual stock recovery criteria, the Co-managers have agreed upon the following goals to protect and increase population diversity of the summer chum salmon (from PNPTT and WDFW 2003):

1) Support planning and implementation of effective habitat protection and recovery actions by the agencies and local governments who have the jurisdiction;
2) Rebuild the existing summer chum salmon stocks to meet their abundance and escapement recovery goals, by natural or artificial (i.e., supplementation) means, under the guidelines, criteria and provisions of the SCSCI, and;
3) Reestablish the majority of the identified extinct summer chum salmon stocks, where feasible, by natural or artificial (i.e., recolonization or reintroduction) means, and under the guidelines, criteria and provisions of the SCSCI.

13.2. Project actions

Project actions can be defined as physical modifications to the landscape designed to address specific habitat situations in specific and limited geographic areas. The Hood Canal Coordinating Council (HCCC) is the designated "Lead Entity" for the Hood Canal watershed under RCW 77.85. It is charged with the coordination of salmon recovery projects from counties, cities, conservation districts, tribes, environmental groups, business interests, landowners, citizens, volunteer groups, regional fish enhancement groups, and other habitat interests. As the Lead Entity, HCCC Staff, in conjunction with the various groups interested in salmon recovery for the Hood Canal watersheds, have developed a Lead Entity strategy (HCCC 2004) to guide the prioritization and selection of habitat restoration projects.[51]

The SRP will defer to the LE process to select, design and develop details of projects, and determine landowner cooperation and feasibility. Many of those projects are described in this SRP. Sections 7-12 list the projects, excerpted from the Lead Entity Strategy, that are crucial for summer chum salmon recovery. Estimated costs for those projects can be found in Appendix D.

[51] For more information and a downloadable copy of the HCCC Lead Entity strategy see http://www.wa.gov/hccc/salmon.htm

All projects that are proposed or recommended in this SRP are strictly voluntary in nature. Those projects that would either take place on, or impact, private property will require the full cooperation and permission from the affected landowners before proceeding. If that landowner permission cannot be obtained, those projects will not proceed.

13.3. County Programmatic actions

Programmatic actions are those that are part of a policy, program, or process. They are generally of a regulatory or planning process nature. Programmatic actions could be part of a County's land use and regulatory program and structures, or watershed planning processes. Comprehensive plans, critical areas ordinances, shoreline management master programs, and zoning could all be considered programmatic actions in this context. Programmatic actions are non-project (i.e., habitat restoration projects--LWD placement, culvert repairs, etc.) in nature. Programmatic actions, however, can include projects when such projects are descriptive of a comprehensive or encompassing process (i.e., levee removal or set back as part of an estuary restoration plan). Watershed management plans often include projects to address identified factors of decline or specific habitat conditions. For the purposes of this SRP, the management plans or planning processes will be considered programmatic actions, whereas the projects identified within the management plans will be categorized as projects.

Specific programmatic actions are described in sections 7-12. Each County that lies within the geographic boundaries of the ESU, also has a suite of programmatic actions that they have agreed to undertake now or consider in the future. These County specific programmatic actions are listed below. These Counties' actions will contribute significantly to the recovery of summer chum salmon, when combined with the projects and other programmatic actions included in this SRP.

13.3.1. Clallam County

The SRP supports the continuation of the present zoning and land use provisions being used by Clallam County. It is anticipated that growth in the Jimmycomelately watershed will be minimal and have relatively little impact on summer chum salmon habitat. Projects currently in progress and planned, such as the *Jimmycomelately Creek-Lower Sequim Bay Estuary Restoration Project*, are anticipated to provide the protection and restoration necessary for the recovery of summer chum salmon in that system. Other work in the Dungeness River watershed will address programmatic issues for Clallam County.

Clallam County has developed a draft report entitled *Towards Recovery*[52], which captures the land use strategies adopted by the County, which will protect salmonid habitat from further degradation and facilitate the recovery of habitat over the long term (Clallam County 2000). In addition, land use planning is an adaptive process and changes in policy are to be expected over time. These changes may be critical to the success or failure of salmon recovery in eastern Clallam County. For Clallam County, the vehicle for incorporating policy changes in land use planning is the Clallam County Comprehensive Plan (CCC 31.02). Following are programmatic actions being considered by Clallam County as reported in "Towards Recovery":

13.3.1.1. Update Clallam County Shoreline master Program and Shoreline code for conformance with the Critical Areas Code and ESA

13.3.1.2. Critical Areas GIS Mapping and Updates

13.3.1.3. Completion of Clallam County acquisition policy

13.3.1.4. Promulgation of clearing and grading code

13.3.1.5. Aquatic Habitat Conservation Area and Wetland Buffers, variance requirements to maintain watershed hydrology and stormwater recommendations

13.3.1.6. Adoption of County-wide stormwater standards

13.3.1.7. Rural Road Design Standards to minimize impervious surface

13.3.1.8. Prepare Clallam County Erosion Control and further integrate Comprehensive Planning Stormwater Brochure and Standards for small parcels

13.3.1.9. FCAAP Funded Channel Meander Zone Mapping &Information Project

13.3.1.10. EPA-funded Wetland function Educational Project

13.3.1.11. Cooperation with City of Sequim in Stormwater Planning for Bell Creek Basin

[52] See Appendix E for the Clallam County document, *Towards Receovery*. The Clallam County programmatic actions listed are excerpted from this report.

13.3.1.12. Change SEPA checklist to encourage reduced impervious surfaces, retention/planting of native vegetation

13.3.1.13. Change SEPA checklist to minimize stormwater impacts from residential development

13.3.1.14. Rural Road Design Standards to minimize impervious surface

13.3.1.15. Complete Forest Practices (conversion) MOU with DNR

13.3.1.16. Further integrate Comprehensive Planning with Watershed Planning to minimize stormwater impacts

13.3.1.17. Addition of 2 Code Compliance Officers to Clallam County Department of Community Development

13.3.2. Jefferson County[53]

At their June 13, 2005, Jefferson Board of County Commissioners meeting, their Board unanimously approved the following programmatic issues to be included in the SRP:

13.3.2.1. Analyses, including EDT, suggest that freshwater factors and environmental conditions are the most important factors affecting summer chum salmon survival. Restoration and protection in the freshwater environments of Jefferson County would provide the greatest benefit. Next in importance is nearshore work in chum natal subestuaries. Specific attention to channel migration zones (CMZs) in the lower elevation areas of rivers, and marine shoreline bulkheading, would be beneficial for summer chum salmon habitat.

13.3.2.1.1. Recommendations from the "Review of Best Available Science for 2004 Comprehensive Plan and Development Regulations Update" (Sept 2004), coupled with recommended and on-going projects, could meet these needs. The SRP recommends that Jefferson County protect the CMZ to at least the extent as described in that September 2004 review document.

[53] A review of Jefferson County's land use regulations and policies relative to summer chum salmon habitat and recovery is presented in Appendix F.

13.3.2.1.2. The SRP recognizes that Jefferson County has been funded to pursue an update of the Shoreline Master Program (SMP). A key provision of an updated SMP is addressing the restoration element. The target date for completion of the revised SMP is mid-2007. The SRP supports Jefferson County's efforts to update the SMP and recommends the following:

13.3.2.1.2.1. The current Unified Development Code (UDC) provides for guidance regarding bulkheads and armoring along the nearshore areas of Jefferson County. The SRP suggests the County continue the current guidelines into the future.

13.3.2.1.2.2. The SRP also recommends, that during the SMP update process, the County consider guidance that discourages hard armoring of the nearshore. That could be a stated preference for soft-bank armoring and incentives to help property owners with those techniques. When repair of bulkheads is required the County should not decrease protections in its current regulations.

13.3.2.1.2.3. Jefferson County's codes for development of bulkheads along marine shorelines are as restrictive as State law currently allows. The SRP will provide an analysis of current State law regarding marine shoreline bulkheading and suggest ways that the law can be revised to allow Counties to be more conservative in their approaches.[54]

13.3.2.2. Summer chum salmon protection for the Dosewallips population would be enhanced by a Jefferson County commitment to develop a comprehensive floodplain management plan consistent with summer chum salmon recovery. This type of planning should involve the Brinnon community and representatives of Dosewallips State Park. The SRP supports such a comprehensive management approach for the lower Dosewallips

[54] See SRP section 13.3.6 for this analysis.

watershed and the HCCC would seek to assist the County in these planning efforts as desired.

13.3.2.3. The Tri-Area Stormwater Management Plan has been adopted by Jefferson County. It is designed, in part, to minimize deleterious impacts to salmon habitat. The SRP commends the County for this effort and recommends that the County commit to implement provisions of the stormwater management plan for the UGA. Some of these provisions include on going monitoring, and encouragement of development that minimizes the amount of impervious area closest to the stream corridor. Restoration and protection projects in the lower watershed (downstream of the UGA) will benefit from these stormwater management plan measures. The SRP encourages the County to consider adopting a stormwater control fee (RCW 36.89) to fund stormwater management capital facilities and program activities (public education, water quality monitoring, stream gauges, etc.) in the UGA.

13.3.2.4. The SRP recommends the application of the revised 2004 Dept. of Ecology wetland rating system on a case-by-case basis as proposed by County staff. The SRP and HCCC could assist the County in the development of appropriate management measures to protect and restore summer chum salmon habitat.

13.3.2.5. Land use and regulatory actions taken by the County for salmon recovery may also satisfy GMA, SMP, and other State requirements and conditions. Likewise, actions taken by the County to comply with GMA and SMA may also benefit salmon recovery. The State should recognize the synergy between GMA, SMP and salmon recovery planning. The County may agree to provide salmon recovery protection provisions if credit for those actions was acknowledged. The SRP will pursue “credit” for County programs relative to appropriate State requirements under GMA and SMA.

13.3.2.6. Jefferson County has been involved in the acquisition of “refugia” (last best habitat areas), mainly along the Dosewallips and Duckabush Rivers. The SRP acknowledges the County’s efforts towards the protection of summer chum salmon habitat and supports the continuation of these programs as appropriate. The SRP

is in the process of describing the involvement by the County in this matter.

13.3.2.7. The SRP acknowledges that the County has adopted the latest "Stormwater Management Manual for Western Washington (dated August 2001, revised in 2005, from Dept. of Ecology) as the set of stormwater management standards for development and re-development in Jefferson County.

13.3.2.8. The SRP supports County staff in their efforts to look at ordinances and regulations to seek flexibility to allow low impact development and implement those practices in areas needing protection for summer chum salmon habitat.

13.3.2.9. Current land use and regulatory programs under the authority of the County are assumed to be adequate to allow for the protection and restoration of summer chum salmon populations. Funding and resources are necessary for the County to pursue enforcement of current regulations and site-specific biological reviews. The SRP recommends the following:

13.3.2.9.1. The SRP will support and help pursue adequate resources for the County to enforce and implement the current Jefferson County regulatory program.

13.3.2.9.2. Endangered Species Act (ESA) mandated exemption from litigation might be possible if the County was able to take the necessary and appropriate actions to enforce current programs and complete the necessary biological reviews. The SRP will assist in pursuing such an exemption under appropriate provisions of the (ESA).

13.3.2.10. The SRP supports the County staff efforts in the development of a process to provide a "stakeholder convention" for the prioritization of conservation and salmon recovery actions. As the County pursues acquisitions and conservation futures type programs, the SRP can assist in facilitating prioritization of the proposed actions.

13.3.2.11. The SRP recommends that Jefferson County pursue consideration of the State's Community, Trade, and Economic Development (CTED) model clearing and grading guidance as part of its analysis of low impact development rules. Since the County will be responsible by law for assuming sole jurisdiction over Class IV General forest practices, these clearing and grading guidelines could be incorporated.

13.3.2.12. Loss of forest cover is a potential future issue that could impact salmon habitat in the County. The SRP recommends that the County pursue a public education/outreach program that can address loss of valuable forest cover in the future and protect summer chum salmon habitat. The HCCC can provide assistance to the County for these efforts.

13.3.2.13. The SRP supports the continuation of the voluntary BMPs approach for agricultural lands, on a watershed-by-watershed basis and building on the Chimacum example. Jefferson County has a good record of accomplishment in this area.

13.3.2.14. One of the goals of the SRP is to show that the burden of salmon recovery extends beyond the Counties to the State and Federal level. The County would likely pursue many other actions listed in the SRP if funding and staff resources were available. The SRP supports and will pursue additional resources for the County to pursue recovery actions as appropriate. Resources for the County will be necessary for enforcement, monitoring, public outreach/education, and adaptive management.

13.3.2.15. The HCCC can assist the County with resources and technical review, in considering a variety of innovative and creative measures to address protection and restoration of habitat. Such measures or tasks might include various compensatory mitigation measures (i.e., transfer of development rights programs, implementing existing UDC provisions), revisions of the Unified Development Code, land banks, wetland mitigation banks, etc.

13.3.3. Kitsap County

On November 8, 2005, the Kitsap Board of County Commissioners affirmed the following programmatic issues that Kitsap County[55] has implemented, or will implement will implement if funding and staff are available, and that these issues can be included in the SRP:

13.3.3.1. Seek funding to conduct a West Kitsap Nearshore Assessment (to supplement earlier work by Point No Point Treaty Council). The nearshore assessment will 1) conduct a baseline characterization of the County's nearshore environment and assess its ecological health and function, 2) identify restoration and preservation opportunities and develop a strategy for ranking and prioritizing those opportunities, and 3) develop a management framework based on functions and processes of nearshore ecology. The assessment will provide a baseline from which results of nearshore protection/restoration actions may be evaluated allowing an adaptive management approach to future nearshore activities. The methodology to be used will likely be the same as that used by East Kitsap County and the City of Bainbridge Island.

13.3.3.2. Consider adoption in 2007 of the Kitsap County Draft Shoreline Environmental Designations (subject to the required public review and adoption process), which includes dual designations for some areas that include important habitat types for forage fish spawning. Dual designations provide one designation for the above the ordinary high water mark (OHWM) to reflect current and surrounding land uses and a more restrictive designation for nearshore areas below the OHWM.

13.3.3.3. Update Kitsap County's Shoreline Master Plan in 2011. The update will include:

13.3.3.3.1. An evaluation of the criteria for allowing docks and piers that considers the protection of herring habitat.

13.3.3.3.2. Identification of herring habitat spawning areas as habitats of local importance with the possible requirement for habitat management plans.

13.3.3.3.3. Consideration of cumulative effects from overwater structures in updating the SMP (for example, build out

[3] A summary review of Kitsap County's policies and regulations relative to summer chum salmon habitat and recovery planning are described in SRP Appendix G.

scenarios with overwater structures), taking into account processes that control functions.

13.3.3.3.4. The gathering of information from studies that will be used to inform land use planners and managers to best manage natural resources

13.3.3.3.5. Development of incentive programs to encourage community docks vs. single-family docks.

13.3.3.3.6. Instead of the use of site-by-site overwater structure permits, use long range planning tools to address potential impacts to eelgrass areas.

13.3.3.4. Consider adoption of proposed revisions to the Critical Areas Ordinance, including extending buffers for shorelines designated as "Conservancy" to 50 ft. and adopting Ecology's wetland rating system and recommended flexible buffers options.

13.3.3.5. Develop Volunteer Anchor Free Zones modeled after Jefferson County. Provide designated moorage buoys at all public facilities and install marker buoys showing boaters where eelgrass is located so they can avoid anchoring there.

13.3.3.6. Seek resources to fully fund Kitsap County/Kitsap Health District Pollution Identification and Correction (PIC) program. Expand the PIC program to look at nutrient loading.

13.3.3.7. Develop incentive programs to encourage removing unnecessary shoreline armoring and the use of soft bank protection (*e.g.* using the Public Benefit Rating System).

13.3.3.8. Achieve compliance with NPDES Phase II requirements pending review by Ecology.

13.3.3.9. The Kitsap County Public Works has adopted the ESA 4(d)-compliant regional road maintenance guidelines and will continue to operate according to those principles.

13.3.3.10. Kitsap County encourages the use of low impact development (LID) techniques, which conserve natural areas and minimize development impacts. The County is currently reviewing its development ordinance relative to LID issues under a contract with the Puget Sound Action Team.

13.3.3.11. Seek funding to conduct a comprehensive forage fish spawning survey to update documentation maps, especially for sand lance. Seek funding to support protection and restoration of existing forage fish spawning areas.

13.3.3.12. Seek funding to develop a beach nourishment program to restore lost sediment supply to beaches and restore/maintain spawning area substrate.

13.3.3.13. Develop methods to quantify cumulative effects from overwater structures.

13.3.3.14. Develop a method of identifying, and develop long range planning tools to manage, cumulative impacts of shoreline development, armoring and stormwater on herring, surf smelt and sand lance spawning areas.

13.3.3.15. Actively seek funding to support protection and restoration of marine riparian areas.

13.3.3.16. Revegetate public lands wherever possible.

13.3.3.17. Protect existing riparian habitat through acquisitions and conservation easements wherever possible.

13.3.3.18. Seek resources to fund more enforcement activities.

13.3.3.19. Support development of native vegetation workshops for local shoreline owners and master gardeners (using the Mason County model).

13.3.3.20. Develop education and outreach programs, which may include:

13.3.3.20.1. Funding an Education/Outreach position,

13.3.3.20.2. Implementing a shoreline stewardship program,

13.3.3.20.3. Conducting shoreline educational workshops,

13.3.3.20.4. Developing a video on how salmon are using Kitsap and what citizens can do to protect and improve conditions, and

13.3.3.20.5. Offer the Sound Boater Program to educate recreational boaters on boating best management practices.

13.3.3.21. The SRP will provide an analysis of current State law regarding marine shoreline bulkheading and suggest ways that the law can be revised to allow Counties to be more conservative in their approaches.

13.3.3.22. The SRP further supports continued and additional resources, including funding and staff, for the County to pursue and engage in forums, implementation, and enforcement of County programs, ordinances, and regulations.

13.3.3.23. Land use and regulatory actions that may be taken by the County for salmon recovery may also satisfy GMA, SMP, and other State requirements and conditions. Likewise, actions taken

by the County to comply with GMA and SMA may also benefit salmon recovery. The State should recognize the synergy between GMA, SMP and salmon recovery planning. The County may agree to provide salmon recovery protection provisions if credit for those actions was acknowledged. The SRP will pursue "credit" for County programs relative to appropriate State requirements under GMA and SMA.

13.3.3.24. One of the goals of the SRP is to show that the burden of salmon recovery extends beyond the Counties to the State and Federal level. The County would likely pursue many other actions listed in the SRP if funding and staff resources were available. The SRP supports and will pursue additional resources for the County to pursue recovery actions as appropriate. Resources for the County will be necessary for enforcement, monitoring, public outreach/education, and adaptive management.

13.3.3.25. The HCCC can assist the County with resources and technical review, in considering a variety of innovative and creative measures to address protection and restoration of habitat. HCCC can work with County staff in the interpretation of databases, technical input, and assistance.

13.3.4. Mason County

On June 29, 2005, the Mason Board of County Commissioners affirmed the following programmatic issues that Mason County has implemented, or will implement, within funding constraints, and that these issues can be included in the SRP[56]:

13.3.4.1. To support summer chum salmon recovery and protection the Hood Canal Coordinating Council's Summer Chum Salmon Recovery Plan (SRP) recognizes and supports that Mason County has already implemented or is in the process of implementing the following provisions:

13.3.4.1.1. Stormwater management planning is underway for the Hoodsport and Skokomish areas and the County is in the process of adopting a stormwater management ordinance. Stormwater management planning is also occurring for the Belfair area as part of the water, sewer, and road improvements associated with Highway SR 3.

[56] An initial Mason County Salmon Receovery program review was done by County staff and is included in Appendix H. It was consulted in preparation of this section of the SRP.

13.3.4.1.2. Mason County has adopted a policy to encourage use of "soft-bank" armoring for developments that occur in freshwater channel migration zones and along marine shorelines.

13.3.4.1.3. Mason County Conservation District has been awarded a manure control grant and is in the process of the design, development, and implementation of manure control best management practices (BMPs) that affect the waters of Mason County.

13.3.4.2. The SRP is recommending the following actions be considered and endorsed by the Mason County Board of Commissioners:

13.3.4.2.1. The SRP recognizes that Mason County will need to pursue an update of the Shoreline Master Program (SMP). A key provision of an updated SMP is addressing the restoration element. The SRP supports Mason County's efforts to update the SMP. The SRP recommends that during the SMP update process, the County consider guidance that discourages hard armoring of the nearshore. That could be a stated preference for soft-bank armoring, and incentives to help property owners with those techniques. When repair of bulkheads is required the County should not decrease protections in their current regulations.

13.3.4.2.2. The SRP recommends the application of the revised 2004 Dept. of Ecology wetland rating system.

13.3.4.2.3. The SRP supports County staff in their efforts to look at ordinances and regulations to seek flexibility to allow low impact development and implement those practices in areas needing protection for summer chum salmon habitat.

13.3.4.2.4. The SRP supports the adoption of incentive-based programs that provide density bonuses and other incentives that encourage residential clustering and more intensive land uses in rural areas to be offset by larger blocks of open space.

13.3.4.3. Other issues Mason County may consider include:

13.3.4.3.1. Adoption of the Department of Ecology's "Stormwater Management Manual for Western Washington" (revised 2005).

13.3.4.3.2. Development of a regional approach (Hood Canal wide) to public education and outreach regarding SRP issues and actions.

13.3.4.3.3. Floodplain/watershed management planning efforts in select watersheds (i.e., Hama Hama, Lilliwaup, Union, Skokomish) with discussions that will consider summer chum salmon habitat conditions and recovery actions.

13.3.4.3.4. The SRP recommends that Mason County consider clearing and grading guidelines that are compatible with summer chum salmon habitat restoration and protection.

13.3.4.3.5. Loss of forest cover in residential and commercial areas is a potential future issue that could impact salmon habitat in the County. The County may pursue a public education/outreach program that can address loss of valuable forest cover in the future and protect summer chum salmon habitat. The HCCC can provide assistance to the County for these efforts.

13.3.4.4. The SRP further supports continued and additional resources, including funding and staff, for the County to pursue and engage in forums, implementation, and enforcement of County programs, ordinances, and regulations.

13.3.4.4.1. Land use and regulatory actions taken by the County for salmon recovery may also satisfy GMA, SMP, and other State requirements and conditions. Likewise, actions taken by the County to comply with GMA and SMA may also benefit salmon recovery. The State should recognize the synergy between GMA, SMP and salmon recovery planning, and work towards flexibility and support for innovative approaches and actions taken on the part of the County. The SRP will pursue State and Federal acknowledgement and support of innovative models and strategies that are incorporated into County land use and regulatory programs relative to appropriate State requirements under GMA and SMA.

13.3.4.4.2. One of the goals of the SRP is to show that the burden of salmon recovery extends beyond the Counties to

the State and Federal level. The County would likely pursue many other actions listed in the SRP if funding and staff resources were available. The SRP supports and will pursue additional resources for the County to pursue recovery actions as appropriate. Resources for the County will be necessary for enforcement, monitoring, public outreach/education, and adaptive management.

13.3.4.4.3. The HCCC can assist the County with resources and technical review, in considering a variety of innovative and creative measures to address protection and restoration of habitat. HCCC can work with County staff in the interpretation of databases, technical input, and assistance.

13.4. Other programmatic actions

13.4.1. Harvest and Hatcheries

As discussed in SRP sections 4 and 5, it is recommended to continue the co-manager designed and implemented harvest management regimes and supplementation programs as described in the SCSCI (WDFW and PNPTT 2000). These activities, combined with the other project and programmatic actions described in this SRP, will provide the opportunity for the recovery of the Hood Canal/Eastern Strait of Juan de Fuca summer chum salmon ESU.

13.4.2. Regional Problems

Within the Hood Canal and the Eastern Strait of Juan de Fuca there are some problems that are 'regional' in nature and must be addressed through a larger scale approach. These problems span watershed, County and WRIA boundaries. They pose special challenges because they are physically large, very costly and complicated to address. Two such problems are described below.

13.4.3. US Highway 101 Causeways

The problem with Highway 101 is that it creates physical blockage, destruction of habitat, and functional degradation of estuaries and along-shore processes. It does this by the existence of the earthen fill causeways that support it. This problem exists along the west side of Hood Canal and along the eastern Strait of Juan de Fuca. It impacts, to different degrees, five of the major west-side Hood Canal drainages (Skokomish, Lilliwaup, Hama Hama, Duckabush, and Dosewallips Rivers) as well as Salmon, Snow, and Jimmycomelately Creeks along the Eastern Strait of Juan de Fuca. To address this problem with spanning of the estuaries and river mouths, the Washington State Department of Transportation (WSDOT) will need political support locally, because of the

disruptions to the public and local landowners that any realignment or reconstruction work would entail. WSDOT will also need political support and substantial amounts of funding from the State Legislature and the US Congress, because of the high costs of the various projects that would be required to address this issue, and because of the lower funding priority of Highway 101 relative to other major roadways and highways in the state.

13.4.4. Logging Roads in the Olympic National Forest

Sediment delivery to many major rivers and streams, from erosion and mass wasting on US Forest Service (USFS) roads, is a large problem. This problem impacts streams all along the west side of Hood Canal and in the eastern Strait of Juan de Fuca. To address this problem the USFS will need local political support to close many of the failing roads that are no longer used for logging access, and to upgrade and stabilize roads still used for resource protection and management, or for recreation. The USFS will also need political support and substantial amounts of funding from the US Congress because of the high cost of this program. An adequate and stable budget for road maintenance is also needed to reduce the risks of sedimentation from inadequately maintained roads in the future. The USFS Access and Travel Management Plan (2003) has laid out a comprehensive and prioritized approach to managing their road networks, now it must be funded.

13.4.5. Community Nearshore Restoration Program

The Hood Canal Coordinating Council currently runs a program called the Community Nearshore Restoration Program (CNRP). It focuses efforts on the part of the watershed that has the most potential for affecting water quality—marine waterfront property owners. The approach is two-fold. It works directly with marine waterfront property owners to provide incentives for voluntary restoration actions on private property. It also engages those individuals, and their neighbors and community, in an education program specifically on and about their property and beaches. This helps improve public awareness, galvanize a sense of community around watershed and nearshore processes, and improve public support for environmental protections.

The HCCC has been successful with the CNRP in the two “piloted” areas of Hood Canal. Those were the Northshore and Dewatto communities in Mason County. In those programs, the HCCC has worked directly with and educated more than 235 shoreline landowners. We are in the process of completing more than 20 shoreline restoration projects with those property owners, and we have achieved two critical estuary protection projects through the purchase of conservation easements. To date, this program has been funded by the US Fish & Wildlife Service in the Northshore Community, and by the Puget Sound Action Team in the Dewatto Community.

The site locations chosen are based on recommendations from the Lead Entity Strategy, the SRP, and ongoing HCCC assessments. Within the marine shoreline, certain areas are more critical for restoration because of their ecological importance. Pocket estuaries, eelgrass beds, forage fish spawning beaches and estuarine wetlands enhance water quality and act as nurseries for fish. These highly sensitive areas will be the areas of focus for additional iterations of the CNRP. The CNRP also focuses on communities with known onsite sewage problems. The following locations along Hood Canal meet the first criterion of biological importance:

- Communities found adjacent to, or on, river estuaries: the Big and Little Quilcene, Dosewallips, Duckabush, Hama Hama, Skokomish, Union, Tahuya rivers, and Tarboo, Lilliwaup, Big Anderson and Big Beef creeks.

- Added to these are the communities that have documented onsite sewage problems: Potlach, Hoodsport and along the southeastern shoreline of Hood Canal.

The CNRP fosters a local community of waterfront owners that is informed and educated about their specific marine nearshore and estuary ecosystem functions and how those functions are affected by human development. Public resources are leveraged by “training the trainer”, which is a model that has been proven to be successful elsewhere. The end result is that we build capacity among the citizenry, and political will for future regulatory actions. All three counties in the Hood Canal are scheduled, in upcoming years, to develop new regulations for shoreline areas through the State of Washington’s Shoreline Management Act. Having an involved, informed citizenry will decrease the animosity, improve understanding and foster a more productive dialog during the development of those regulations.

The projects already developed implement Priority 1 restoration projects from the Lead Entity Strategy (HCCC 2004) for marine nearshore areas. The group of restoration actions to implement previous CNRP iterations is described below.

Project #1A is a levee removal in the intertidal zone of the Union River Estuary, reconnecting 13 acres of isolated salt marsh rearing habitat for ESA-listed summer chum and chinook salmon, improving nutrient processing and providing for more natural stormwater retention.

Project #1B will result in removal of fill and debris left from historical logging and shipping, followed by replanting riparian vegetation within the Tahuya River Estuary, and project monitoring (described below). Implementation of this project will result in improved salmon migration of a shallow-water corridor, improve bank conditions, and improved marine riparian conditions, which will assist in water quality improvements.

Project #1C, in the Dewatto River Estuary, will remove artificial fill that is a remnant from an abandoned artificial boat basin/marina. This project will restore lower riverine and upper salt marsh habitats by restoring the linkage between freshwater and saltwater habitat forming processes. This will increase natural nutrient and organic material processing and reduce anthropogenic water quality impacts to Hood Canal.

Project #1D will result in four demonstration gardens on four individual residential properties. The four properties span the range of ecologic and anthropogenic conditions, from pristine freshwater wetlands to saltwater marsh, gravel shorelines with and without concrete bulkheads, and a highly developed estuary. The rain garden installation will re-establish a native vegetated buffer, improving the quality of salmon habitats and increase pollution and nutrient remediation.

Project 2 is the expanded implementation of the CNRP. We will conduct a 'community assessment' within each of the 'biologically-targeted' communities on the Hood Canal shoreline that was identified through previous assessments. The community assessment determines if there are sufficient community resources to organize into a functioning workgroup. The community assessment also identifies key property owners and recruits them as "ambassadors" to help communicate with the others in their neighborhood and function as an advisory group. Those areas that meet the criteria for both the biological and community assessment will receive repeated, targeted outreach over a period of six to nine months followed up with beach/property walks. Scientists participating in the beach walks will lead discussions about the specific ecological communities, processes and functions of each landowner's shoreline. Finally, after the beach walks, HCCC staff will provide technical assistance and coordinate the planning, design and implementation of the restoration and/or protection project.

Project 3 will be the set of specific actions developed through the proposed expansion of the CNRP throughout Hood Canal. The following demonstration projects are targeted.

- At least one shoreline landowner will remove their bulkhead and install soft-bank armoring. This increases habitat, reduces sediment scour on adjacent landowner property and improves shoreline ecosystem functions for nutrient and organic material cycling.
- At least one shoreline landowner will re-develop their property using low impact development techniques (re-vegetation, stormwater management).
- At least 30 shoreline landowners will re-vegetate their shoreline with native vegetation.
- At least 20 shoreline landowners will remove their old, outdated onsite sewage systems, and either connect to a publicly-managed community sewage system or will install an onsite sewage system that reduces nitrogen output to groundwater/marine waters by at least 50%.

This SRP proposes increasing the frequency of the CNRP process to include the entire ESU geographic area. However, additional resources are needed to proceed with this effort.

13.5. Bank armoring (bulkheading) and shoreline modifications

13.5.1. Overview

Hood Canal summer chum salmon, listed as 'Threatened' under the Endangered Species Act, spend several weeks as juveniles feeding in the productive nearshore waters of Hood Canal. They do that in preparation for their ocean migration. Juvenile summer chum salmon use the nearshore areas, including estuaries, eelgrass beds and nearshore woody debris, for foraging and protection from predation. Many reaches of Hood Canal's shorelines are in a semi-modified state, yet retain substantial functions supporting salmonid migration, rearing, refuge, and osmoregulatory adjustment. Forage fish species also use the Hood Canal shoreline, including Pacific herring, sand lance, and surf smelt. For these reasons, the marine shoreline of this area plays a critical role in the recovery of threatened salmon populations.

Marine shorelines have been altered in Hood Canal by historical and ongoing land uses, primarily through the cumulative impacts of single-family residential development, road building, and agricultural activities. Impacts include changes to vegetation, hydrology, woody debris and construction of bank protection in the form of bulkheads. This section reviews the state laws and regulations that affect construction of marine shoreline armoring (bulkheads), to identify specific changes that might be necessary to better protect and restore nearshore marine habitat.

Although there are several laws that indirectly affect marine shoreline armoring, there are two laws that directly address it: the Shoreline Management Act (Chapter 90.58 RCW) and Construction Projects in State Waters (Chapter 77.55 RCW). Each contains provisions to guide agencies in their regulation of shoreline armoring, to protect marine shoreline property from erosion. The laws contain provisions for the protection of private property rights, and also contain provisions intended to protect environmental features and habitat values of the marine shoreline.

13.5.2. Private Property Protection

Both laws are clear in their intent to allow certain activities, especially bulkheading of marine shoreline property to protect a single-family residence. RCW 77.55.200 (2) states, "The department [WDFW] **shall** issue a hydraulic permit with or without conditions within forty-five days of receipt of a complete and accurate application which authorizes commencement of construction, replacement, or repair of a marine beach front protective bulkhead or rockwall for

single-family type residences or property," with conditions that are detailed in the law [emphasis added].

There are several activities listed in the Shoreline Management Act, Chapter 90.58.030(3) RCW, which are exempt from shoreline permitting. Those include:

- Construction of the normal protective bulkhead common to single-family residences;
- Construction on shorelands by an owner, lessee, or contract purchaser of a single-family residence for his own use or for the use of his or her family
- Construction of a dock, including a community dock, designed for pleasure craft only, for the private noncommercial use of the owner, lessee, or contract purchaser of single and multiple family residences (within a set value limit).

13.5.3. Shoreline Habitat Protection

The Shoreline Management Act also contains provisions that may provide local governments with tools to protect nearshore marine habitat from degradation:

Chapter 90.58.100(6) RCW states, "Each master program shall contain standards governing the protection of single family residences and appurtenant structures against damage or loss due to shoreline erosion. The standards shall govern the issuance of substantial development permits for shoreline protection, including structural methods such as construction of bulkheads, and nonstructural methods of protection. The standards shall provide for methods that achieve effective and timely protection against loss or damage to single family residences and appurtenant structures due to shoreline erosion. The standards shall provide a preference for permit issuance for measures to protect single family residences occupied prior to January 1, 1992, where the proposed measure is designed to minimize harm to the shoreline natural environment."

Construction Projects in State Waters, Chapter 77.55.200 (c) RCW states, "Construction of a new bulkhead or rockwall, or replacement or repair of an existing bulkhead or rockwall waterward of the existing structure shall not result in the permanent loss of critical food fish or shellfish habitats;"

The laws seem to direct local governments and state agencies to:

a) Allow individuals to build single family residences on the shoreline, and to protect their structure once it is built; and,
b) Restrict the construction of residences, bulkheads and other structures to prevent any further loss or degradation of nearshore habitat."

13.5.4. Analysis

The negative impacts to nearshore habitat from the current regulatory structure include the following:

- Bulkheads and docks can impact habitat and alter natural shoreline processes, often affecting adjacent landowners that necessitates similar action for those property owners to protect their shoreline from erosion.
- Bulkheads are often installed to ease beach access and prevent potential erosion, not necessarily to protect a structure that is in danger because of erosion.
- While some Counties limit bulkhead construction and encourage "soft-bank" or bioengineered bank protection, there is no State mandate to do so. In fact, to completely prohibit the installation of bulkheads to protect existing residences would be contrary to state law.
- Since both the construction of a home and the construction of a bulkhead are exempt from shoreline permitting, new homes are being constructed which either require bank protection at the time of construction, or soon after construction.
- State agencies do not have the same review and approval authority for exempt activities that they have for permitted activities. This includes review of permit variances and conditional approvals, which have to have Department of Ecology approval to assure that adequate protections are being implemented (Chapter 90.58.140(10) RCW).

Complicating the issue further, there appears to be a direct statutory conflict within the Shoreline Management Act. It is not totally clear that Counties can adopt standards that govern the issuance of substantial development permits for shoreline protection (Chapter 90.58.100(6) RCW). This is because, "Construction of the normal protective bulkhead common to single-family residences… shall not be considered substantial developments for the purpose of this chapter" (Chapter 90.58.030(3)(e) RCW). So, local governments face conflicting interpretations with regard to this statute.

The Shoreline Management Act also refers to shoreline permitting requirements "for the construction of a bulkhead or other measures to protect a single-family residence and its appurtenant structures from shoreline erosion" (Chapter 90.58.140(11) RCW). That statute then provides a detail of procedures required to issue such permits.

It is clear that the legislative intent must be clarified for the permitting of bulkheads and other measures to protect a single-family residence. Without legislative clarification, local jurisdictions are likely to avoid potential legal battles that would follow a more conservative regulatory approach that would provide greater environmental protection. The current ambiguous situation will lead to continued increases in armored marine shorelines, continued habitat degradation, and risks to the recovery of summer chum salmon.

13.6. Conclusions

Summer chum salmon returns and escapements to Hood Canal and Strait of Juan de Fuca streams have improved in recent years. Those returns have been enhanced by exceptionally strong returns to various supplementation programs. Adicks, et. al. (2005) suggests that these returns, combined with the high percentage of natural origin recruits (number of fish entering the fisheries) in recent years, provide a substantial reduction of the extinction risk for this Evolutionarily Significant Unit. While all of the above events are very positive results for the summer chum salmon recovery effort, they do not yet constitute full recovery. Ocean conditions have been favorable in the recent past, but can be expected to be unfavorable again sometime in the near future. The co-managers have developed interim recovery goals for summer chum salmon (PNPTT and WDFW 2003b). Those goals require strong production performance of natural origin recruits over three generations (12 years). But, the recent large returns do not yet meet those recovery goals and the diversity is not yet restored to all of Hood Canal where summer chum historically inhabited. The co-managers are just now beginning the development of a 5-year review of the Summer Chum Salmon Conservation Initiative results, and that document (due by the end of 2005) will contain a detailed discussion of progress towards full recovery.

True recovery cannot be defined until the viability analysis is completed and a tool (such as EDT[57] or Shiraz) is developed to measure the efficacy of recovery actions relative to the viable salmonid population (VSP) parameters. The SRP is proceeding with the co-manager developed recovery goals and threshold criteria. This SRP will work in coordination with the co-managers' 5-year review process to determine the status of recovery progress. Should the SRP be implemented, as described in section 15 below, tremendous progress will be made towards recovery of the Hood Canal/Eastern Strait of summer chum salmon ESU.

[57] At this time the EDT developed only provides an assessment of the baseline conditions that impact summer chum salmon. Recovery actions can be inferred from this analysis, but an actual model or tool to do that analysis has yet to be completed. More resources are necessary to conduct this type of analysis and model development.